

# **COLUMBIA RIVER REGIONAL FORUM**

## **TECHNICAL MANAGEMENT TEAM**

April 5, 2006 Meeting

### **FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS**

Facilitator: Donna Silverberg

Notes: Robin Harkless

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

#### **Review Minutes**

No comments on the notes were shared at this time.

#### **Sea Lion Update**

Robert Stansell, COE, shared information with TMT about the status of sea lion issues at and below Bonneville. The COE is exploring methods to deter the pinnipeds from preying on salmon, including exclusion gates (SLED's), acoustics and harassment. The sea lions have shown up earlier and in larger numbers this year. They were responsible for 3.4% take of the total run in 2005, compared to .4% in 2002. From February 10 to March 27, over 200 sturgeon have been taken, which is unprecedented. More stellars are staying at Bonneville, which is also unusual. NOAA, ODFW, and WDFW began active hazing downstream below Bonneville in early April to try to deter the animals from getting near the dam. The states are pursuing a lethal take permit; tribes are pursuing a subsistence hunting permit, and NMFS, Oregon, Washington and the COE are looking into holding/transport permits. If the Secretary of Commerce approves a lethal taking permit, a task force would be put together to determine the right approach for implementing this permit. As more is known about the actions being taken to acquire permits, information will be shared at TMT.

#### **Bonneville Second Powerhouse Corner Collector Operation**

Dennis Schwartz, COE, shared with TMT that a pit tag detection antenna has been installed at the B2 CC, and the COE needs to complete testing of this new device. Because of an influx of water into the system in February, the whole construction and testing schedules were delayed. The COE would like to pursue completion of the 10 day test which could require going beyond the April 10 start of spill date. The COE requested a 4-7 day extension (April 14-17) to allow time to complete the dry test.

A question was asked about what information would be missing with a shorter test. From the COE's perspective, because this is a new device and is being tested after installation for the first time, doing a full analysis will lead to better calibration as well as better biological testing in the future.

NOAA agreed to a short extension through Friday April 14 with a check in on Wednesday, April 12 to assess the progress of the testing. NOAA did not support delaying start up of the corner collector at Bonneville any further at this point but would reevaluate its position based on the April 12 report. USFWS said hatchery releases are expected around April 12 or 13, so urged the COE to complete the test and open the corner collector as quickly as possible. Oregon had some concerns and was not prepared to fully comment at this time. Idaho said April 10 spill start was a compromised date and that delaying the start of spill would negatively impact the fish – the Idaho representative did not object to extending the test to April 14, but requested that TMT revisit the situation next week to determine how to proceed. Washington and Montana supported Idaho's suggestion.

**ACTION:** There will be a TMT conference call on Wednesday, April 12, to discuss the status of the dry test, fish counts and how to move forward from there. The COE will share information with the salmon managers about the impacts of a shorter test.

### **Lower Granite Hydrophone Diving**

Cathy Hlebechuk explained that Lower Granite would operate with two units on April 5 and 6 to accommodate divers doing hydrophone tests. Elevation ranges were 733-735' on April 5 and 733-734' on April 6. With 92 kcfs flows coming through the system, the gas cap would be exceeded in order to meet the above ranges. The salmon managers offered that a TDG exceedance up to 125% for this short period of time would be acceptable, but that if TDG exceeded 125%, they recommended the COE pond the additional water and release it at night.

### **John Day Transformer Update**

Kim Oldham, COE, shared the latest information about the John Day T-1 outage that occurred on March 2. Three temporary replacement bushings were brought in by Walla Walla District, arriving on-site today (April 5). This will allow additional tests, and once the tests are completed, the COE will better understand the extent of the damage and the critical path for returning T-1 to service. At this point, 7 replacement bushings have been ordered, due to arrive sometime around August. The best case scenario would be to replace the bushings and have the transformer back in service in September. Some overhaul work will be done while the system is down, but this will not impede the timeframe or work to get the system back into service. The current capacity is about 20-22 kcfs per unit at full load, with 11 units available.

### **John Day Spill Operations, SOR 2006-3**

In response to the T-1 outage at John Day, the salmon managers put forward a request to spread the 60% nighttime spill level out over a 24-hour period (30% over 24 hours) to aid in juvenile and adult migration until repairs are completed or other operations arranged. Units 1-4 at the project have been studied and found to be preferred passage routes for fish. Without units 1-4 in service, the salmon managers anticipate an eddy will form at the juvenile bypass outfall and they believe that spreading spill over 24 hours would aid in safer migration. Modeling of passage given the current structural condition is not available, and while recognizing the proposed operation is a deviation from the court-ordered spill pattern, the salmon managers felt this would be the best operation from a biological perspective.

The Corps said Judge Redden's opinion, AA declarations and the Spill Implementation Plan clearly state 0 daytime 60% nighttime spill commence April 10. Since the SOR was first given to them the afternoon before, the Corps has not had a chance to review the request from a biological basis. Corps policy guidance is to implement 0/60% and recommended Salmon Managers and AA biologists observe fish conditions. If adverse conditions result in negative fish impacts, TMT could then make a recommendation to change operations. The COE added that they want to make an operational decision that is legally and biologically sound. Questions remained regarding the process for moving forward in the event a consensus was reached to recommend a change in spill patterns from the court ordered operation.

**ACTION:** A conference call was scheduled for Wednesday, April 12 at which TMT will discuss this issue further. As next steps, TMT members agreed to consult with their legal and policy advisors about if and when to take a recommendation to the Judge or other appropriate processes. The COE will share the SOR with their biological experts for them to review. Cathy Hlebechuk agreed to raise the process questions at the 4/6 IT meeting.

**UPDATE:** This issue was discussed at IT on Thursday, April 6. Following that meeting, further off-line discussion between COE, NOAA and others led to agreement to implement the 0/60% operation starting Monday, April 10 and for AA and Salmon Manager biologists to discuss the operation and monitor conditions.

### **Second Quarterly Report and 2006 Fish Passage Implementation Plan**

Eric Braun, COE, reported that a quarterly report was shared with Judge Redden on April 3, and is available on [www.salmonrecovery.gov](http://www.salmonrecovery.gov). The report includes an update on collaborations relative to the remand, resolution for observer status, the federal position to extend the remand, and expiration of BPA's contract for the Fish Passage Center. A spill implementation plan was submitted on March 31, also available on the website, that includes Judge Redden's specific order and declarations from General Martin and Rock Peters, COE.

### **HYSSR/ESP Runs**

Julie Amman, COE, shared inflow forecasts on current conditions. Details about the assumptions that went into the models are included in the links to this agenda item on the TMT page.

**ACTION:** TMT members will share suggestions with the COE for alternative scenarios for input to the model (e.g. additional flows in June at Dworshak).

### **Flow Augmentation Volumes**

Bar and ESP models of augmentation volumes for Dworshak were shared, and can be found linked to the agenda item on the TMT page. The COE will add models for Libby and Hungry Horse at the next TMT meeting.

### **Spring/Summer Update**

The Spring/Summer update of the WMP is on the web and available for comment. TMT will discuss the draft at the April 19 TMT meeting.

## **Operations Review**

*Reservoirs* – Libby was at 2403.7', with 6.2 kcfs outflows. Dworshak was at 1531.7', with full load out targeting 1526.3' end of April flood control elevation. Inflows at Lower Granite were at 92 kcfs due to increases at Brownlee. John Day and Lower Monumental will require flexibility with spill patterns to accommodate safe navigation. Any changes will be short-term (minutes). McNary unit 6 will operate outside 1% for about a day, as part of a long-term upgrading plan. McNary began spilling on 4/3. Bonneville released 219 kcfs on 4/4. Hungry Horse was at elevation 3526', increasing outflows to meet flood control. The 4/10 flood control target is 3523.5', 3522' on 4/15, and 3518' on 4/30.

The Grand Coulee shifted flood control was 1248.4' on April 10. With Grand Coulee draft rate limitations the actual target is now 1250.5'. Grand Coulee was currently at 1252'. The end of April target is 1233.4'.

*Fish* – Rick Kruger, ODFW, reported that scale analysis data for chum will be available in about a month; Washington and Oregon are coordinating efforts on this. It will be added to a TMT agenda in May. To date, 149 chum juveniles have been counted; this number is lower than usual. Temperature information forecasts the end of emergence around the end of April, but it could be later with so few juveniles seen at this point. Oregon and USFWS will look more closely at the data and share insights at the next TMT meeting. Lower Granite yearling chinook are in the thousands; the run is earlier than normal. Steelhead numbers are strong, also in the thousands at Lower Granite. Few adults have been observed at Bonneville at this point. Kokanee and sockeye counts out of Dworshak reservoir at Lower Granite are mostly kokanee at this point.

*Power system* – Nothing to report.

*Water quality* – Jim Adams, COE, shared that 90 kcfs inflows at Lower Granite would result in 57 kcfs spill through each turbine, producing about 121% TDG. 117% TDG was expected at Little Goose in the upcoming few days; the COE will monitor this.

*Other* – Kyle Dittmer, CRITFC, shared a flyer for a free lecture, "Wind Energy Meteorology", to be held in Portland on 4/25. All are welcome to attend.

## **TMT Meeting Schedule**

TMT meetings are scheduled for April 12 (conference call) and 19. These dates are subject to change. Check the TMT web page for updates.

*Wednesday, April 12 CONFERENCE CALL* agenda items include:

- Bonneville PH 2 corner collector operations
- SOR 2006-3/John Day spill operations

*Wednesday, April 19* agenda items include:

- Priest Rapids update
- HYSSR/ESP runs

- WMP Spring/Summer update
- Operations review: spill, chum numbers, Upper Snake flow augmentation

## Technical Management Team Meeting

April 5, 2006

### ***1. Greetings and Introductions.***

Today's Technical Management Team meeting was chaired by Cathy Hlebechuk and facilitated by Donna Silverberg. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at this meeting. Anyone with questions or comments about these notes should contact Hlebechuk at 503-808-3942.

### ***2. Priest Rapids Update.***

Paul Wagner said there was one violation of the flow band constraint, on March 26. Grant County PUD is taking this violation very seriously, he said, and has taken steps to ensure that it does not recur.

### ***3. Bonneville Second Powerhouse Corner Collector Operation.***

Dennis Schwartz said the high-flow PIT-tag detector antenna has now been installed in the B2 corner collector; the system is now ready to be watered up. The system has been tested, but additional "dry testing" is needed. The preliminary dry testing phase was supposed to take 10 days; however, a week of construction time was lost during February due to high precipitation and instream flow.

We've made up about four of those days, said Schwartz, but we're still about three days behind. Spill was supposed to begin at Bonneville on April 10, but we would like to be able to continue our dry testing for as long as it takes, said Schwartz – I don't think it will take more than four days past the 10<sup>th</sup> to complete the dry testing. During this process, the corner collector will need to be opened and closed several times in order to create a calibration grid; given the high priority and expense of this system, we would like to request four additional days of testing, if needed, in order to be sure the system performs effectively, said Schwartz. It could take less time, and it could take more, added Scott Bettin – we won't really know until we start testing, but the important thing is to get it right. Schwartz added that the contractor for this work, Digital Angel, is aware of the tight time-frame for completing this work and has agreed to work 20-hour days until the system is up and running.

What do we gain if we do this testing early – how is this going to help us next year? Tom Lorz asked. This is like the first car ever built – you have to turn it on and see if it works, Bettin replied. What if it doesn't work? Lorz asked – if there's a big problem, that will lead to delays in future PIT-tag work. That's what we're trying to circumvent, Schwartz replied – we want to see what this thing will do. They can only do so much preliminary testing back in Minnesota; we need to see how it performs on-site, under actual conditions. the goal is a better biological test in 2007.

The group devoted a few minutes of discussion to this topic; there was general agreement that there are few juvenile fish passing Bonneville, currently. Four extra days probably won't be a big deal at this point, but I wouldn't want to see any additional delay in corner collector operation, said Gary Fredricks. David Wills said the Fish and Wildlife Service agrees. Russ Kiefer expressed disappointment that the PIT-tag detection system won't be ready on time; once again, the fish have to suffer because we can't do our jobs, he said. However, Idaho agreed to convene a TMT conference call on this topic next Wednesday, April 12; at that time, the group will review the current status of this project, and make a decision as to how much additional testing time may be needed. It was further agreed to take a look at current fish passage data and the impacts of non-operation of the corner collector at that meeting.

#### ***4. Sea Lion Update.***

Robert Stansell gave the group an update on the sea lion situation at Bonneville Dam this spring. He put up a series of overheads, titled "Pinniped Deterrents at Bonneville Dam," touching on the following topics:

- Objectives
- Seasonal distribution, 2002-2006 (the sea lions are arriving earlier, and in larger numbers, each year)
- Predation impacts at Bonneville Dam
- Minimum number of pinnipeds present per day at Bonneville Dam – up to 39 per day, and the salmon run has yet to arrive
- Estimate of the number and percent of salmonids caught by pinnipeds at Bonneville Dam – chinook, steelhead, sturgeon, other, unknown fish – only 18 chinook have passed Bonneville to date, and more than 70 have been taken by sea lions in the Bonneville tailrace. More than 200 sturgeon have been taken by sea lions to date, some more than 6 feet in length
- Actions for 2006: exclusion gates, acoustics and harassment – pyrotechnics and rubber bullets
- 8 main fishway entrances at Bonneville Dam, blocked off with “SLEDS” with openings 15 3/8 inches wide; total cost \$1 million+. SLEDS are in place at all gates now.
- Early in the season, C404 was able to pass through the SLEDS. He is currently in the Washington-side fish ladder; it is believed he is entering through the floating orifice gates. Steps are being taken to close that entrance to sea lion entry.
- Acoustic deterrents are also being used; they have an effective range of 100 feet in calm unaerated water. They are painfully loud within 30 feet, but do not affect salmon. C404 seems likewise unaffected – a determined animal who knows a good food source is available is not deterred.
- Harassment is also being used – pyrotechnic devices, rubber bullets, high-pressure hoses.
- Endangered Stellar sea lions are showing up in unusually large numbers, and are starting to haul out at Bonneville, the first time this behavior has been seen.
- U of I will be evaluating fish passage through the SLEDS with 360 radio-tagged spring chinook.
- Project personnel will also be evaluating sea lion abundance and predation during days of acoustics on and active harassment vs. days of acoustics off and no harassment. So far, sea lion take and presence seems little-affected by acoustics and harassment.
- The Corps is evaluating the possibility of moving C404 to a Seaworld-type facility; no takers so far.
- ODFW and WDFW have begun active boat hazing below Bonneville; so far, little impact has been seen.
- The states and tribes are also actively pursuing a lethal take permit through Section 120; it is a lengthy process (2+ years). In the meantime, the Corps is planning to try to trap C404 with a floating barge trap.

Rick Kruger described the ongoing sea lion predation on sturgeon at Bonneville as a very serious problem, from Oregon's perspective. John Wellschlager noted that it is disheartening, to say the least, for the region to

spend huge sums to improve passage conditions at the dams, only to see the sea lions have such a significant impact.

### ***5. John Day Transformer Update.***

Kimberly Oldham updated the TMT on the current status of the John Day transformers. We're continuing to try to find the cause of the failure and to assess the damage, she said; once that process is completed we can outline potential fixes. We know we had a fault-to-ground that damaged three bushings on the Oregon side. We have completed all the testing we can perform until we replace the three damaged bushings. To do that, we have to draw down the oil in the three transformers, she said; we're working on a scope of work as we speak, get the funds in place and get the repairs underway by the end of April. Each transformer will need to be completely drawn down and visually inspected before it can be placed back in service.

We have seen some abnormal test results so far, Oldham said; if more than one transformer is damaged, we do not have additional spare phases in stock. We don't yet have a critical path to a return-to-service date, she added. If the damage is limited, would return to service by the end of May be possible? Wagner asked. No, Oldham replied – it will be early September before these repairs can be completed, in the best-case scenario. We're doing everything we can to expedite this work, she added, but nothing is certain at this point. In response to a question, Oldham said the Corps will complete its normally-scheduled six-year maintenance/overhaul work on at least two of the units while the units are off-line; however, this work will not delay the return of these units to service.

The bottom line is that 11 units are still in service at John Day, with a hydraulic capacity of about 242 Kcfs at full load (the high end of 1% peak efficiency).

### ***6. John Day Spill Operations.***

Russ Kiefer said the salmon managers are concerned about the fact that the south shore ladder at John Day passes the most fish; without those units in operation, a dead area will be created that will make it more difficult for adult salmonids to find and use the ladder. The adult return forecast is low this year anyway, he said; this is only going to increase the negative impact. We need to figure out the best way to mitigate the adult and juvenile impacts at John Day Dam, within the economic constraints we face, Kiefer said; the salmon managers believe the best solution is to go to 30 percent spill at John Day, 24 hours a day.

We realize that this is different than what is in the court order, currently, Kiefer said; however, I am confident that if we can reach regional consensus that this is the best solution, given the mechanical situation at John Day Dam in 2006,

Judge Redden will not oppose this change. Kiefer submitted SOR 2006-03, outlining this requested change in operations. Wagner said NOAA Fisheries supports this SOR.

The group devoted a few minutes of discussion to SOR 2006-03. Wellschlager noted that the action agencies are under court order and cannot deviate from the court-ordered spill operation until otherwise instructed by Judge Redden. The SOR discusses the concern that an eddy may form, he said; however, we don't know for a fact that the eddy will materialize. He suggested that it may make sense to monitor the situation to see whether the eddy does in fact appear, given the fact that the change from zero daytime spill and 60 percent spill at night to 30 percent spill 24 hours a day will cost Bonneville ratepayers an estimated \$2-\$4 million.

Various salmon managers reiterated that, given the mechanical situation at John Day, they do not support waiting to see whether or not the eddy actually appears – in their best professional judgement, 30 percent spill 24 hours a day is the best operation for fish passage in 2006. I would add that, in these low-run years, every surviving fish becomes more critical, Wagner said. In response to a question, Wagner said NOAA's lawyers are not yet aware that a change may be needed to the court-ordered spill operation.

It was agreed that the various TMT representatives will discuss this issue with the biological, policy and legal personnel within their agencies, and will continue to explore the best way to reach regional consensus and move forward. It was further agreed that this is a highly time-sensitive issue, which needs to be resolved as soon as possible. Kiefer added that he is not comfortable with any more delay than is absolutely necessary; he suggested that the TMT send a letter to Judge Redden expressing the consensus support of the salmon management agencies for this change in operation. Wellschlager said that, in his opinion, this would be inappropriate; it is up to the Corps, as the action agency charged with implementing the spill operation, to request this change in operation.

Hlebechuk said the Corps wants to do the right thing here; however, they need a little more time to evaluate the biology merit of the proposed change in operation. Jim Litchfield said his understanding is that any of the parties in the lawsuit can have their lawyers start this process by communicating with the other parties in the remand, and suggested that this would be the most expeditious path forward.

Ultimately, it was agreed that the Corps will consult with their biologists on the merits of the operation and research the process for making this type of adjustment to the court-ordered operations, and will bring their findings for discussion at tomorrow's IT meeting.

## **7. Second Quarterly Report and Implementation Plan.**

Eric Brown said the second remand report was filed with the court on April 3; it is available from the [salmonrecovery.gov](http://salmonrecovery.gov) website. The 2006 Fish Passage Implementation Plan, which includes spill operations, was also submitted to the court, and is also available from the [salmonrecovery.gov](http://salmonrecovery.gov) website.

Brown briefly reviewed the contents of the quarterly report (please see the full text of this document for details), touching on the activities of the policy work group, the expiration of BPA's contract with the Fish Passage Center, and the current status of steps 1-7 in the remand process. In response to a question, Brown said this is a federal government report, not a Corps report.

Brown also reviewed the 2006 Fish Passage Implementation Plan, dated March 31; it comprehensively describes the plans for fish passage at all eight FCRPS dams, including the plans to spill as ordered by the court. It also includes the planned research at each of the projects, emergency protocols and adaptive management provisions, which may have some applicability to the John Day SOR discussed earlier in today's agenda.

## **8. HYSSR/ESP Runs.**

Julie Ammann reviewed the April 3 ESP HYSSR runs, the first of the year. In general, she said 2006 is shaping up to be a good water year; according to HYSSR, at Priest Rapids, the April 15, April 30, May and June flow objectives would be met in virtually all of the 44 historic runoff shapes modeled. At Lower Granite, the picture looks like this:

Month	Occurrence out of 44 years	Average flow for 44 years (Kcfs)	Flow objective (Kcfs)
April 15	3	89	100
April 30	23	107	100
May	37	117	100
June	41	119	85
July	28	60	54
August 1-15	0	37	54
August 16-31	0	34	54

Ammann also shared a series of ESP inflow volume graphs for the eight FCRPS projects (please refer to the hot-link from today's agenda on the TMT homepage for details). She also provided the following March final volume comparisons:

Grand Coulee: 5.79 MAF (Apr-Aug), 96% of average  
 Lower Granite: 2.47 MAF, (Apr-Jul), 115% of average  
 The Dalles: 91.2 MAF (Apr-Aug), 98% of average  
 Hungry Horse: 2.2 MAF (Apr-Aug), 107% of average  
 Libby: 6.3 MAF (Apr-Aug), 102% of average  
 Dworshak: 2.6 MAF (Apr-Jul), 99% of average

Ammann also provided this table of period average flows, by project:

Project	April 1-15	April 16-30	May 1-31	June 1-30	July 1-31	August 1-15	August 16-30
LIB	4.6	5.9	13.9	13.3	25.4	16.1	15.2
HGH	9.9	9.2	4.2	6.3	6.3	4.9	8.1
GCL	118	155	182	154	145	104	94
PRD	123	166	205	181	159	111	99
DWR	13	16.3	8.2	2	11	11	11
BRN	39	40	29	27	16	14	14
LWG	89	107	117	119	60	37	34
MCN	219	274	324	309	225	151	136
TDA	232	291	338	320	229	154	140
BON	235	296	343	325	232	157	142

### ***9. Flow Augmentation Volumes.***

Ammann also provided a series of bar charts and ESP volume “spaghetti plots” for Dworshak, showing the current elevation, the volume to fill, the current water supply forecast and the expected flow augmentation volume given the 44 historic water years modeled. The bottom line is that we will be releasing more than minimum flow from Dworshak in 2006, Ammann said; how much more won't be known until a little later in the season.

### ***10. Spring/Summer Update.***

Hlebechuk said the Corps is awaiting comments on the newly-released spring/summer update; she asked that any comments be submitted at the next TMT meeting on April 19.

### **11. Operations Review.**

Hlebechuk said Libby is at elevation 2403.7 feet, releasing 6.2 Kcfs, drafting slightly. Dworshak is currently at elevation 1531.7 feet, releasing full load; the April 30 flood control elevation at that project is 1526.3 feet, and that's what the Corps is shooting for. Lower Granite was releasing 74 Kcfs yesterday; Brownlee increased its outflow yesterday by 20 Kcfs, so there is now 92 Kcfs passing Lower Granite.

At John Day and Lower Monumental, there are navigation spill changes when traffic occurs, as has been the case in the past, Hlebechuk said. That occurs for safety reasons, she explained. McNary unit 6 is being tested outside the 1% range for one day on Sunday, as part of the longterm McNary update effort.

Spill started at McNary yesterday, said Hlebechuk; the project is spilling 53-119 Kcfs, depending on hourly flow. The project is currently releasing up to 258 Kcfs of total river flow; four units are currently out of service at the project, although two of those units will be back in service by this weekend. Bonneville outflow was 219 Kcfs yesterday.

At Hungry Horse, said Tony Norris, the current elevation is about 3526 feet; discharge has increased to 4.25 Kcfs to draft the project toward 3523.5 feet, its April 10 flood control elevation. The April 30 flood control target is 3518 feet at Hungry Horse. Grand Coulee is currently at elevation 1252 feet and drafting toward its shifted flood control elevation of 1250.5 feet on April 10. We're bumping up against draft rate limits at Grand Coulee, said Norris; we have a lot of water to move to reach that April 10 target. The bottom line is that you can expect to see high flows at Priest Rapids through the end of April, because we need to draft Grand Coulee by about 20 feet – to 1233.4 feet – by April 30.

Moving on to fish, Wills said spill is scheduled to begin April 10 at the Lower Columbia projects. He said the Fish and Wildlife Service does not see a problem with spill and TDG for chum below Bonneville. Kruger said ODFW has this year's scale analysis data for the chum and will bring that information to a future TMT meeting. Wills said chum seining counts to date are 149 juvenile chum, compared to 1,300+ for this date last year. In other words, we're lagging behind last year's emergence timing, Wills said. Based on temperature unit data alone, the end of emergence would be April 15, he added; however, actual emergence, as measured by seining, seems to be lagging somewhat behind. There is more flow in the river this year, which may be reducing the effectiveness of seining, Wagner observed.

Wagner said current juvenile passage numbers are being posted daily; there are already thousands of juveniles showing up at Lower Granite. Juvenile salmon are also showing up in large numbers at John Day. We're also seeing thousands of juvenile steelhead showing up at Lower Granite, he said. Very few adult spring chinook have passed Bonneville to date – less than 10 fish per day, 54 fish year-to-date. About 3,100 adult steelhead have passed Bonneville to date, Wagner added.

Jim Adams reported that TDG levels are creeping upward at the Lower Snake projects; TDG levels in the Little Goose forebay are expected to reach 117% within the next few days.

### **12. Next TMT Meeting Date.**

The next meeting of the Technical Management Team was set for Wednesday, April 19. Meeting summary prepared by Jeff Kuechle, BPA contractor. [Meeting went until 12:30]

### **TMT Participant List April 5, 2006**

<b>Name</b>	<b>Affiliation</b>
Donna Silverberg	Facilitation Team
Cathy Hlebechuk	COE
Jim Litchfield	Montana
Julie Ammann	COE
Kyle Dittmer	CRITFC
Kevin Nordt	Mid-Cs
Robin Harkless	facilitation Team
Jim Adams	COE
Scott Boyd	COE
Glenn Traeger	Avista
Dan Spear	BPA
Russ Kiefer	IDFG
David Wills	USFWS
John Wellschlager	BPA

Tony Norris	USBR
Paul Wagner	NMFS
Robert Stansell	COE
Bernard Platt	COE
Tim Heizenrater	PPM
Todd Cook	PPM
Don Faulkner	COE
Mike Buchko	Powerex
Dave Statler	NPT
Margaret Filardo	FPC
Dave Benner	FPC
Barry Espensen	CBB
Jim Gaspard	BC Hydro
Rick Kruger	ODFW
Scott Bettin	BPA
Lance Elias	PPL
Bruce MacKay	Consultant
Gary Fredricks	NOAA
Tom Lorz	CRITFC
Cindy LeFleur	WDFW